

### ANALYTICAL REPORT

CHECKED FOR COMPLETENESS  
OF PARAMETERS ORDERED BY:

*[Signature]*  
10/2/10

Job Number: 360-30036-1

Job Description: Olin Chemical Surfacewater

For:

Olin Corporation

3855 North Ocoee Street

Suite 200

Cleveland, TN 37312-4441

Attention: Mr. Steven Morrow

*Joseph A. Chimi*

Approved for release.  
Joe Chimi  
Report Production Representative  
9/23/10 11:46 AM

Designee for

Becky C Mason

Project Manager II

becky.mason@testamericainc.com

09/23/2010

Results relate only to the items tested and the sample(s) as received by the laboratory. The test results in this report meet all NELAC requirements for accredited parameters, exceptions are noted in this report. Pursuant to NELAC, this report may not be reproduced except in full, and with written approval from the laboratory. TestAmerica Westfield Certifications and Approvals: MADEP MA014, RIDOH57, CTDPH 0494, VT DECWSD, NH DES 2539, NELAP FL E87912 TOX, NELAP NJ MA008 TOX, NELAP NY 10843, NY ELAP 10843, North Carolina 647, NELAP PA 68-04386. Field sampling is performed under SOPs WE-FLD-001 and WE-FLD-002.

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## MassDEP Analytical Protocol Certification Form

Laboratory Name: **TestAmerica Westfield** Project #: **360-30036-1**

Project Location: RTN:

**This form provides certifications for the following data set: list Laboratory Sample ID Number(s):**

**360-30036-1**

Matrices: ☒ Groundwater/Surface Water ☐ Soil/Sediment ☐ Drinking Water ☐ Air ☐ other:

**CAM Protocols (check all that apply below):**

8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	Mass DEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	Mass DEP APH CAM IX A <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	Mass DEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>
6010 Metals CAM III A <input checked="" type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	332.0 Perchlorate CAM VIII B <input type="checkbox"/>	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>E</b>	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>
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**Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350**

<b>H</b>	Were <b>all</b> QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.

**I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.**

Signature: 

Position: Laboratory Director

Printed Name: Steven C. Hartmann

Date: 9/23/10 11:39

## **CASE NARRATIVE**

**Client: Olin Corporation**

**Project: Olin Chemical Surfacewater**

**Report Number: 360-30036-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### **RECEIPT**

The samples were received on 09/09/2010; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.0 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2 C of the required temperature or method specified range. For samples with a specified temperature of 4 C, samples with a temperature ranging from just above freezing temperature of water to 6 C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

### **TOTAL METALS (ICP)**

Sample OC-SD17SW (360-30036-1) was analyzed for total metals (ICP) in accordance with EPA SW-846 Method 6010B. The sample was prepared on 09/13/2010 and analyzed on 09/14/2010.

Sodium failed the recovery criteria low for the MS of sample OC-SD17SW (360-30036-1) in batch 360-63147. The presence of the '4' qualifier in the report indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Sodium failed the recovery criteria low for the post digestion spike of sample OC-SD17SW (360-30036-1) and exceeded the % difference limit for the serial dilution of the sample. The associated LCS and LCSD recovered within control limits. Refer to the QC report for details.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

### **DISSOLVED METALS**

Sample OC-SD17SW (360-30036-1) was analyzed for dissolved metals in accordance with EPA SW-846 Method 6010B. The sample was analyzed on 09/21/2010.

Sodium failed the recovery criteria low for the MS of sample OC-SD17SW (360-30036-1) in batch 360-63439. The associated LCS and LCSD recovered within control limits. Refer to the QC report for details.

At the request of the client, an abbreviated/modified MCP analyte list was reported for this job.

No other difficulties were encountered during the dissolved metals analysis.

All other quality control parameters were within the acceptance limits.

### **ANIONS**

Sample OC-SD17SW (360-30036-1) was analyzed for anions in accordance with EPA Method 300.0. The sample was analyzed on 09/09/2010 and 09/21/2010.

Sample OC-SD17SW (360-30036-1)[10X] required dilution prior to analysis due to high target concentration. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the anions analysis.

All quality control parameters were within the acceptance limits.

**AMMONIA**

Sample OC-SD17SW (360-30036-1) was analyzed for ammonia in accordance with Lachat 107-06-1B. The sample was prepared on 09/14/2010 and analyzed on 09/21/2010.

Sample OC-SD17SW (360-30036-1)[5X] required dilution prior to analysis due to high concentration. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analysis.

All quality control parameters were within the acceptance limits.

**SPECIFIC CONDUCTIVITY**

Sample OC-SD17SW (360-30036-1) was analyzed for specific conductivity in accordance with SM20 2510B. The sample was analyzed on 09/14/2010.

No difficulties were encountered during the conductivity analysis.

All quality control parameters were within the acceptance limits.

## EXECUTIVE SUMMARY - Detections

Client: Olin Corporation

Job Number: 360-30036-1

Lab Sample ID Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
<b>360-30036-1</b>	<b>OC-SD17SW</b>				
Aluminum		1200	100	ug/L	6010B
Chromium		290	5.0	ug/L	6010B
Sodium		99000	2000	ug/L	6010B
Sulfate		310	20	mg/L	300.0
Nitrate as N		1.8	0.050	mg/L	300.0
Chloride		170	10	mg/L	300.0
Ammonia		36	0.50	mg/L	L107-06-1B
Specific Conductance		1200	1.0	umhos/cm	SM 2510B
<i><b>Dissolved</b></i>					
Aluminum		250	100	ug/L	6010B
Chromium		110	5.0	ug/L	6010B
Sodium		120000	2000	ug/L	6010B

## METHOD SUMMARY

Client: Olin Corporation

Job Number: 360-30036-1

Description		Lab Location	Method	Preparation Method
Matrix	Water			
Metals (ICP)		TAL WFD	SW846 6010B	
Preparation, Total Metals		TAL WFD		SW846 3010A
Sample Filtration, Field		TAL WFD		FIELD_FLTRD
Anions, Ion Chromatography		TAL WFD	MCAWW 300.0	
Anions, Ion Chromatography		TAL WFD	MCAWW 300.0	
Nitrogen Ammonia		TAL WFD	LACHAT L107-06-1B	
Distillation, Ammonia		TAL WFD		Distill/Ammonia
Conductivity, Specific Conductance		TAL WFD	SM SM 2510B	

### Lab References:

TAL WFD = TestAmerica Westfield

### Method References:

LACHAT = LACHAT

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: Olin Corporation

Job Number: 360-30036-1

Method	Analyst	Analyst ID
SW846 6010B	Smith, Tim J	TJS
MCAWW 300.0	Emerich, Rich W	RWE
LACHAT L107-06-1B	Emerich, Rich W	RWE
SM SM 2510B	Stewart, Alyse M	AMS

## SAMPLE SUMMARY

Client: Olin Corporation

Job Number: 360-30036-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
360-30036-1	OC-SD17SW	Water	09/09/2010 0925	09/09/2010 1500

# **SAMPLE RESULTS**

# Analytical Data

Client: Olin Corporation

Job Number: 360-30036-1

Client Sample ID: OC-SD17SW

Lab Sample ID: 360-30036-1

Client Matrix: Water

Date Sampled: 09/09/2010 0925

Date Received: 09/09/2010 1500

## 6010B Metals (ICP)

Method:	6010B	Analysis Batch: 360-63147	Instrument ID:	Varian ICP
Preparation:	3010A	Prep Batch: 360-63066	Lab File ID:	091410b.csv
Dilution:	1.0		Initial Weight/Volume:	50 mL
Date Analyzed:	09/14/2010 1302		Final Weight/Volume:	50 mL
Date Prepared:	09/13/2010 0807			

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	1200		15	100
Chromium	290		1.0	5.0
Sodium	99000		250	2000

## 6010B Metals (ICP)-Dissolved

Method:	6010B	Analysis Batch: 360-63439	Instrument ID:	Varian ICP
Preparation:	N/A		Lab File ID:	092110c.csv
Dilution:	1.0		Initial Weight/Volume:	
Date Analyzed:	09/21/2010 1528		Final Weight/Volume:	1.0 mL
Date Prepared:				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Aluminum	250		15	100
Chromium	110		1.0	5.0
Sodium	120000		250	2000

*[Handwritten Signature]*  
10/2/10

**Analytical Data**

Client: Olin Corporation

Job Number: 360-30036-1

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**General Chemistry****Client Sample ID: OC-SD17SW**

Lab Sample ID: 360-30036-1

Date Sampled: 09/09/2010 0925

Client Matrix: Water

Date Received: 09/09/2010 1500

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Nitrate as N	1.8		mg/L	0.050	0.050	1.0	300.0
	Analysis Batch: 360-63312	Date Analyzed: 09/09/2010 2048					
Sulfate	310		mg/L	20	20	10	300.0
	Analysis Batch: 360-63466	Date Analyzed: 09/21/2010 1749					
Chloride	170		mg/L	10	10	10	300.0
	Analysis Batch: 360-63313	Date Analyzed: 09/09/2010 2303					
Nitrite as N	ND		mg/L	0.10	0.10	10	300.0
	Analysis Batch: 360-63312	Date Analyzed: 09/09/2010 2303					
Ammonia	36		mg/L	0.50	0.50	5.0	L107-06-1B
	Analysis Batch: 360-63430	Date Analyzed: 09/21/2010 1503					
	Prep Batch: 360-63132	Date Prepared: 09/14/2010 0930					
Specific Conductance	1200		umhos/cm	1.0	1.0	1.0	SM 2510B
	Analysis Batch: 360-63309	Date Analyzed: 09/14/2010 1155					

## DATA REPORTING QUALIFIERS

Client: Olin Corporation

Job Number: 360-30036-1

Lab Section	Qualifier	Description
Metals		
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
	W	PS: Post-digestion spike was outside control limits
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	V	Serial Dilution exceeds the control limits

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report		Method	Prep Batch
		Basis	Client Matrix		
Metals					
Prep Batch: 360-63066					
LCS 360-63066/2-A	Lab Control Sample	T	Water	3010A	
LCSD 360-63066/3-A	Lab Control Sample Duplicate	T	Water	3010A	
MB 360-63066/1-A	Method Blank	T	Water	3010A	
360-30036-1	OC-SD17SW	T	Water	3010A	
360-30036-1DU	Duplicate	T	Water	3010A	
360-30036-1MS	Matrix Spike	T	Water	3010A	
360-30036-1PDS	Post Digestion Spike	T	Water	3010A	
360-30036-1SD	Serial Dilution	T	Water	3010A	
Analysis Batch:360-63147					
LCS 360-63066/2-A	Lab Control Sample	T	Water	6010B	360-63066
LCSD 360-63066/3-A	Lab Control Sample Duplicate	T	Water	6010B	360-63066
MB 360-63066/1-A	Method Blank	T	Water	6010B	360-63066
360-30036-1	OC-SD17SW	T	Water	6010B	360-63066
360-30036-1DU	Duplicate	T	Water	6010B	360-63066
360-30036-1MS	Matrix Spike	T	Water	6010B	360-63066
360-30036-1PDS	Post Digestion Spike	T	Water	6010B	360-63066
360-30036-1SD	Serial Dilution	T	Water	6010B	360-63066
Analysis Batch:360-63439					
LCS 360-63439/1	Lab Control Sample	T	Water	6010B	
LCSD 360-63439/7	Lab Control Sample Duplicate	T	Water	6010B	
MB 360-63439/2	Method Blank	T	Water	6010B	
360-30036-1	OC-SD17SW	D	Water	6010B	
360-30036-1DU	Duplicate	D	Water	6010B	
360-30036-1MS	Matrix Spike	D	Water	6010B	
360-30036-1SD	Serial Dilution	D	Water	6010B	

#### Report Basis

D = Dissolved

T = Total

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Prep Batch: 360-63132</b>					
LCS 360-63132/2-A	Lab Control Sample	T	Water	Distill/Ammonia	
MB 360-63132/1-A	Method Blank	T	Water	Distill/Ammonia	
360-30036-1	OC-SD17SW	T	Water	Distill/Ammonia	
<b>Analysis Batch:360-63309</b>					
LCS 360-63309/1	Lab Control Sample	T	Water	SM 2510B	
MB 360-63309/4	Method Blank	T	Water	SM 2510B	
360-30036-1	OC-SD17SW	T	Water	SM 2510B	
<b>Analysis Batch:360-63312</b>					
LCS 360-63312/4	Lab Control Sample	T	Water	300.0	
MB 360-63312/3	Method Blank	T	Water	300.0	
360-30036-1	OC-SD17SW	T	Water	300.0	
<b>Analysis Batch:360-63313</b>					
LCS 360-63313/4	Lab Control Sample	T	Water	300.0	
MB 360-63313/3	Method Blank	T	Water	300.0	
360-30036-1	OC-SD17SW	T	Water	300.0	
<b>Analysis Batch:360-63430</b>					
LCS 360-63132/2-A	Lab Control Sample	T	Water	L107-06-1B	360-63132
MB 360-63132/1-A	Method Blank	T	Water	L107-06-1B	360-63132
360-30036-1	OC-SD17SW	T	Water	L107-06-1B	360-63132
<b>Analysis Batch:360-63466</b>					
LCS 360-63466/4	Lab Control Sample	T	Water	300.0	
MB 360-63466/3	Method Blank	T	Water	300.0	
360-30036-1	OC-SD17SW	T	Water	300.0	

#### Report Basis

T = Total

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

Method Blank - Batch: 360-63066

Method: 6010B  
Preparation: 3010A

Lab Sample ID: MB 360-63066/1-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/14/2010 1248  
Date Prepared: 09/13/2010 0807

Analysis Batch: 360-63147  
Prep Batch: 360-63066  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 091410b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Aluminum	ND		15	100
Chromium	ND		1.0	5.0
Sodium	ND		250	2000

Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 360-63066

Method: 6010B  
Preparation: 3010A

LCS Lab Sample ID: LCS 360-63066/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/14/2010 1251  
Date Prepared: 09/13/2010 0807

Analysis Batch: 360-63147  
Prep Batch: 360-63066  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 091410b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

LCSD Lab Sample ID: LCSD 360-63066/3-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/14/2010 1254  
Date Prepared: 09/13/2010 0807

Analysis Batch: 360-63147  
Prep Batch: 360-63066  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 091410b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Aluminum	100	96	80 - 120	4	20		
Chromium	101	99	80 - 120	2	20		
Sodium	98	95	80 - 120	4	20		

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### Matrix Spike - Batch: 360-63066

Method: 6010B  
Preparation: 3010A

Lab Sample ID: 360-30036-1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/14/2010 1308  
Date Prepared: 09/13/2010 0807

Analysis Batch: 360-63147  
Prep Batch: 360-63066  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 091410b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	1200	5000	6020	95	75 - 125	
Chromium	290	1000	1220	93	75 - 125	
Sodium	99000	20000	114000	74	75 - 125	4

### Post Digestion Spike - Batch: 360-63066

Method: 6010B  
Preparation: 3010A

Lab Sample ID: 360-30036-1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/14/2010 1314  
Date Prepared: 09/13/2010 0807

Analysis Batch: 360-63147  
Prep Batch: 360-63066  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 091410b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	1200	5000	5950	94	75 - 125	
Chromium	290	1000	1200	91	75 - 125	
Sodium	99000	20000	113000	72	75 - 125	W

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### Duplicate - Batch: 360-63066

Method: 6010B

Preparation: 3010A

Lab Sample ID: 360-30036-1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/14/2010 1305  
Date Prepared: 09/13/2010 0807

Analysis Batch: 360-63147  
Prep Batch: 360-63066  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 091410b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Aluminum	1200	1410	12	20	
Chromium	290	327	12	20	
Sodium	99000	110000	11	20	

### Serial Dilution - Batch: 360-63066

Method: 6010B

Preparation: 3010A

Lab Sample ID: 360-30036-1  
Client Matrix: Water  
Dilution: 5.0  
Date Analyzed: 09/14/2010 1311  
Date Prepared: 09/13/2010 0807

Analysis Batch: 360-63147  
Prep Batch: 360-63066  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 091410b.csv  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Sample Result/Qual	Result	%Diff	Limit	Qual
Aluminum	1200	1320	6.4	10	
Chromium	290	309	6.5	10	
Sodium	99000	110000	11	10	V

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### Method Blank - Batch: 360-63439

Method: 6010B  
Preparation: N/A

Lab Sample ID: MB 360-63439/2  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/21/2010 1525  
Date Prepared: N/A

Analysis Batch: 360-63439  
Prep Batch: N/A  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 092110c.csv  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	MDL	RL
Aluminum	ND		15	100
Chromium	ND		1.0	5.0
Sodium	ND		250	2000

### Lab Control Sample/

### Lab Control Sample Duplicate Recovery Report - Batch: 360-63439

Method: 6010B  
Preparation: N/A

LCS Lab Sample ID: LCS 360-63439/1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/21/2010 1523  
Date Prepared: N/A

Analysis Batch: 360-63439  
Prep Batch: N/A  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 092110c.csv  
Initial Weight/Volume:  
Final Weight/Volume: 10 mL

LCSD Lab Sample ID: LCSD 360-63439/7  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/21/2010 1558  
Date Prepared: N/A

Analysis Batch: 360-63439  
Prep Batch: N/A  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 092110c.csv  
Initial Weight/Volume:  
Final Weight/Volume: 10 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Aluminum	102	101	80 - 120	1	20		
Chromium	101	100	80 - 120	0.8	20		
Sodium	101	100	80 - 120	0.9	20		

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### Matrix Spike - Batch: 360-63439

Method: 6010B  
Preparation: N/A

Lab Sample ID: 360-30036-1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/21/2010 1535  
Date Prepared: N/A

Analysis Batch: 360-63439  
Prep Batch: N/A  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 092110c.csv  
Initial Weight/Volume:  
Final Weight/Volume: 10 mL

Analyte	Sample Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	250	5000	5430	104	75 - 125	
Chromium	110	1000	1110	100	75 - 125	
Sodium	120000	20000	133000	69	75 - 125	4

### Duplicate - Batch: 360-63439

Method: 6010B  
Preparation: N/A

Lab Sample ID: 360-30036-1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/21/2010 1531  
Date Prepared: N/A

Analysis Batch: 360-63439  
Prep Batch: N/A  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 092110c.csv  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Aluminum	250	246	2	20	
Chromium	110	111	1	20	
Sodium	120000	118000	0.8	20	

### Serial Dilution - Batch: 360-63439

Method: 6010B  
Preparation: N/A

Lab Sample ID: 360-30036-1  
Client Matrix: Water  
Dilution: 5.0  
Date Analyzed: 09/21/2010 1538  
Date Prepared: N/A

Analysis Batch: 360-63439  
Prep Batch: N/A  
Units: ug/L

Instrument ID: Varian ICP  
Lab File ID: 092110c.csv  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL

Analyte	Sample Result/Qual	Result	%Diff	Limit	Qual
Aluminum	250	245	NC	10	J
Chromium	110	113	0.008	10	
Sodium	120000	121000	1.8	10	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### Method Blank - Batch: 360-63312

Method: 300.0

Preparation: N/A

Lab Sample ID: MB 360-63312/3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/09/2010 1731  
Date Prepared: N/A

Analysis Batch: 360-63312  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Nitrate as N	ND		0.050	0.050
Nitrite as N	ND		0.010	0.010

### Lab Control Sample - Batch: 360-63312

Method: 300.0

Preparation: N/A

Lab Sample ID: LCS 360-63312/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/09/2010 1746  
Date Prepared: N/A

Analysis Batch: 360-63312  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N	4.00	3.78	95	85 - 115	
Nitrite as N	4.00	3.67	92	85 - 115	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### Method Blank - Batch: 360-63313

Method: 300.0

Preparation: N/A

Lab Sample ID: MB 360-63313/3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/09/2010 1731  
Date Prepared: N/A

Analysis Batch: 360-63313  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Chloride	ND		1.0	1.0

### Lab Control Sample - Batch: 360-63313

Method: 300.0

Preparation: N/A

Lab Sample ID: LCS 360-63313/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/09/2010 1746  
Date Prepared: N/A

Analysis Batch: 360-63313  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride	40.0	38.6	96	85 - 115	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### Method Blank - Batch: 360-63466

Method: 300.0

Preparation: N/A

Lab Sample ID: MB 360-63466/3  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/21/2010 1232  
Date Prepared: N/A

Analysis Batch: 360-63466  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Sulfate	ND		2.0	2.0
Chloride	ND		1.0	1.0

### Lab Control Sample - Batch: 360-63466

Method: 300.0

Preparation: N/A

Lab Sample ID: LCS 360-63466/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/21/2010 1247  
Date Prepared: N/A

Analysis Batch: 360-63466  
Prep Batch: N/A  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 1.0 mL  
Final Weight/Volume: 10 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	80.0	80.4	100	85 - 115	
Chloride	40.0	41.0	102	85 - 115	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### Method Blank - Batch: 360-63132

Method: L107-06-1B

Preparation: Distill/Ammonia

Lab Sample ID: MB 360-63132/1-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/21/2010 1439  
Date Prepared: 09/14/2010 0930

Analysis Batch: 360-63430  
Prep Batch: 360-63132  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	RL	RL
Ammonia	ND		0.10	0.10

### Lab Control Sample - Batch: 360-63132

Method: L107-06-1B

Preparation: Distill/Ammonia

Lab Sample ID: LCS 360-63132/2-A  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/21/2010 1440  
Date Prepared: 09/14/2010 0930

Analysis Batch: 360-63430  
Prep Batch: 360-63132  
Units: mg/L

Instrument ID: No Equipment Assigned  
Lab File ID: N/A  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Ammonia	10.0	9.61	96	85 - 115	

## Quality Control Results

Client: Olin Corporation

Job Number: 360-30036-1

### Method Blank - Batch: 360-63309

Method: SM 2510B

Preparation: N/A

Lab Sample ID: MB 360-63309/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/14/2010 1135  
Date Prepared: N/A

Analysis Batch: 360-63309  
Prep Batch: N/A  
Units: umhos/cm

Instrument ID: Autotitrator  
Lab File ID: 10091400.TXT  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL

Analyte	Result	Qual	RL	RL
Specific Conductance	ND		1.0	1.0

### Lab Control Sample - Batch: 360-63309

Method: SM 2510B

Preparation: N/A

Lab Sample ID: LCS 360-63309/1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 09/14/2010 1114  
Date Prepared: N/A

Analysis Batch: 360-63309  
Prep Batch: N/A  
Units: umhos/cm

Instrument ID: Autotitrator  
Lab File ID: 10091400.TXT  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Specific Conductance	1410	1390	98	85 - 115	

# State Accreditation Matrix

Method Name	Description	State where Primary Accreditation is Carried				
		New Hampshire (NELAC) prim.	Mass	Conn	Florida (NELAC)	North Carolina
821-R-02-012	Toxicity, Acute (48-Hour)(list upon request)	NP			NP	
SM 4500 Cl F	Chlorine, Residual		NP			
SM 9215E	Heterotrophic Plate Count (SimPlate)		P			
SM 9222D	Coliforms, Fecal (Membrane Filter)		P/NP			
SM 9223	Coliforms, Total, and E.Coli (Colilert-P/A)		P			
SM 9224	Coliforms, Total, and E.Coli (Enumeration)		P			
1103.1	E.coli		ambient/ source			
Enterolert	Enterococcus					
200.8 Rev 5.4	Metals (ICP/MS) (list upon request)	NP/P	NP/P	NP/P		
200.7 Rev 4.4	Metals (ICP)(list upon request)	NP/P	NP/P	NP/P		
6010B	Metals (ICP)(list upon request)	NP/SW		NP/SW		
245.1	Mercury (CVAA)	NP/P	NP	NP/P		
7470A	Mercury (CVAA)	NP		NP		
7471A	Mercury (CVAA)	SW		SW		
SM 2340B	Total Hardness (as CaCO3) by calculation	NP/P	NP	NP/P		
3005A	Preparation, Total Recoverable or Dissolved Metals	NP/P		NP/P		
3010A	Preparation, Total Metals	NP/P		NP/P		
3020A	Preparation, Total Metals	NP/P/SW		NP/P/SW		
3050B	Preparation, Metals	SW		SW		
504.1	EDB, DBCP and 1,2,3-TCP (GC)	P	P	P		
608	Organochlorine Pest/PCBs (list upon request)	NP	NP	NP		
625	Semivolatile Org Comp (GC/MS)(list upon request)	NP		NP		
3546	Microwave Extraction	SW				
3510C	Liquid-Liquid Extraction (Separatory Funnel)	NP		NP		
3540C	Soxhlet Extraction	SW				
3550B	Ultrasonic Extraction	SW		SW		
600/4-81-045	Polychlorinated Biphenyls (PCBs) (GC)		NP	NP		
8081A	Organochlorine Pesticides (GC)(list upon request)	NP/SW		NP/SW		
8082A	PCBs by Gas Chromatography(list upon request)	NP/SW		NP/SW		
8270C	Semivolatile Comp.(GC/MS)(list upon request)	NP/SW		NP/SW		
CT ETPH	Conn - Ext. Total petroleum Hydrocarbons (GC)			NP/SW		
MA-EPH	Mass - Extractable Petroleum Hydrocarbons (GC)			NP/SW		NP/SW
524.2	Volatile Org Comp (GC/MS)(list upon request)	P	P	P		
524.2	Trihalomethane compounds	P	P	P		
624	Volatile Org Comp (GC/MS)(list upon request)	NP	NP	NP		
5035	Closed System Purge and Trap	SW		SW		
5030B	Purge and Trap	NP		NP		
8260B	Volatile Org Comp. (GC/MS)(list upon request)	NP/SW		NP/SW		
MAVPH	Mass - Volatile Petroleum Hydrocarbons (GC)			NP/SW		NP/SW
180.1	Turbidity, Nephelometric	P	P	P		
300	Anions, Ion Chromatography	NP/P	NP/P	NP/P		
410.4	COD	NP	NP	NP		
1010	Ignitability, Pensky-Martens Closed-Cup Method	SW		SW		
10-107-06-2	Nitrogen, Total Kjeldahl	NP	NP	NP		
7196A	Chromium, Hexavalent	NP/SW		NP/SW		
9012A	Cyanide, Total and/or Amenable	NP/SW		NP/SW		
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	NP		NP		
9040B	pH	NP		NP		
9045C	pH	SW		SW		
L107041C	Nitrogen, Nitrate	NP	P	NP/P		
L107-06-1B	Nitrogen Ammonia	NP	NP	NP/P		
L204001A CN	Cyanide, Total	P	NP/P	NP/P		
L210-001A	Phenolics, Total Recoverable	NP	NP	NP		
SM 2320B	Alkalinity	NP/P	NP/P	NP/P		
SM 2510B	Conductivity, Specific Conductance	NP/P	NP/P	NP/P		
SM 2540C	Solids, Total Dissolved (TDS)	NP/P	NP/P	NP/P		
SM 2540D	Solids, Total Suspended (TSS)	NP	NP	NP		
SM 3500 CR D	Chromium, Hexavalent	NP		NP		
SM 4500 H+ B	pH	NP/P	NP/P	NP/P		
SM 4500 NO2 B	Nitrogen, Nitrite	NP	P	NP/P		
SM 4500 P E	Phosphorus, Orthophosphate	NP/P	NP	NP/P		
SM 4500 P E	Phosphorus, Total	NP	NP	NP		
SM 4500 S2 D	Sulfide, Total	NP		NP		
SM 5210B	BOD, 5-Day	NP	NP	NP		
SM 5310B	Organic Carbon, Total (TOC)	NP/P	NP	NP/P		

Not all organic compounds are accredited under NELAC

For methods with multiple compounds all compounds may not meet NELAC criteria, listing should be obtained from the laboratory

The lab carries additional accreditations with several states. This is the laboratories typical listing but is subject to change based on the laboratories current certification standing.

## Login Sample Receipt Check List

Client: Olin Corporation

Job Number: 360-30036-1

Login Number: 30036

List Source: TestAmerica Westfield

Creator: Beaumier, Janine E

List Number: 1

Question	T / F / NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	0.0C
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

•53 Southampton Road  
Westfield, MA 01085  
(P) 413-572-4000  
(F) 413-572-3707

PO#	Comments (Special Instructions)
	MCP case narrative
	<p>Dissolved metals are field filtered.</p> <p>Analysis--</p> <p>Ammonia Nitrogen-Lac 107-06-1B</p> <p>Chloride/sulfate--EPA 300</p> <p>Specific Conductivity--SM 2510B</p> <p>Nitrate/Nitrite--EPA 300</p> <p>48 hour hold time on NO<sub>2</sub>, NO<sub>3</sub></p>
	<p>Cooler? <input checked="" type="checkbox"/> N Samples Iced? <input checked="" type="checkbox"/> N</p> <p>Temp @ receipt: <u>0.0</u> °C</p> <p>Preservation/pH checked <u>Not Frozen</u></p> <p>By: _____ Date: _____</p>